

Y student takes on unusual life to study big horn sheep for doctorate

The mountainside is treacherous, but five Rocky Mountain bighorn sheep negotiate rocks and crevices with a surefooted confidence that would turn any mountain climber green with envy.

The small herd stops to eat choke cherries while one of its members bounds to a rock, then turns to stare at onlookers, his huge curling horns framing a face that seems at once kindly and fearless. The presence of human visitors a few hundred yards away seems not to bother him at all.

The sheep, now a rare species, are among about 70 that make their home on a mesa along the Green River corridor in northeastern Utah. Brigham Young University doctoral candidate Tom Smith is studying the animals, living in a tent on the mesa with his wife, Cynthia, and their year-old son, Michael. With winter approaching, Cynthia and Michael will be spending more time in nearby Dutch John while Tom stays at the campsite during the week and in town on the weekends.

The Smiths arrived at the site last May, fresh from two years in Alaska, where Tom studied reindeer for his master's thesis. They plan to remain in northeastern Utah at least through the summer of 1987.

Rocky Mountain bighorn sheep were plentiful in the prime habitat of the Green River corridor for centuries, as evidenced by Indian rock drawings that depict the exquisite animals. But the population virtually disappeared because of many factors, including hunting by early settlers and diseases intro-



One of the Rocky Mountain bighorn sheep being studied by BYU graduate student Tom Smith.

ducing Smith to locate them almost daily. (Periodically he flies over the area to get a full picture of where the sheep are.) He notes what the sheep eat, what their movements are, and how healthy they appear. One large ram has

color or show obvious signs of grazing.

"I've spent up to three hours on hands and knees, looking at every blade of grass and trying to figure out which plants have been foraged," he says.

camp, he dries his specimens, then files them for later consultation with an expert. He believes he has already accounted for about 99 percent of the "biomass" — all living greenery. The information is important in analyzing and evaluat-

duced by domestic sheep.

Both hunters and wildlife enthusiasts appreciate the rarity and beauty of bighorn sheep, in particular the dramatic horns that on adult males can complete a full curl and weigh up to 40 pounds.

In 1983, the Utah Division of Wildlife Resources and the U.S. Forest Service decided the time was right to try re-introducing the species into the Green River area. Domestic sheep herding in the area had decreased, and a substantial amount of Forest Service land was available for the experiment. That year and again in 1984, they transplanted groups of bighorn sheep from Wyoming, totaling 36 animals. To protect the sheep, roads to the area were sealed off and hunting was prohibited.

So far the project has been successful beyond expectations. The herd has more than doubled in two years and signs of maladjustment or illness are low.

Dr. Jerran T. Flinders, professor of botany and range science at BYU, helped design a program to monitor population and determine habitat improvements that would benefit the wild sheep. Smith's job is to carry out the program by observing the sheep and by adding to knowledge about how good management can best help the animals survive and continue to reproduce.

Eight of the animals have been fitted with radio collars so far.

now. Smith can hear the hacking from his observation points, and he is worried that lungworm might be the culprit. The infection can be deadly.

One of Smith's most time-consuming tasks is to study areas where the sheep have fed. After they leave the feeding site, he tries to determine what they have eaten and how much. Plants that have been nipped take on a different

Smith has come across a few surprises. One species of grass that animal scientists have thought bighorn sheep love — agropyronspicatum or bluebunch wheatgrass — it turns out they hardly touch, at least in the summer. And they eat choke cherries, which were thought to be a meal they would avoid.

Smith is also filling the role of botanist by making a collection of all plant species found on the study site. With a plant press back at

The unusual lifestyle of Smith and his family is as interesting as his research itself. They have a two-tent complex set under several tall pine trees, one tent serving as the camp kitchen and the other as the family bedroom. The kitchen has a wooden floor, and food-laden shelves line the tarp walls.

A drum of water sits in one corner and a wood-burning stove, its stovepipe rising through a small hole in the tent's roof, in the other.



Julie Jeppsen's bighorn sheep will be one of her paintings featured during January at the Senior Citizens Building.

s Ohio position

It was Rev. Mr. Halbe and Frank Smith of the Provo congregation who then was moderator of the United Church of Christ Utah Association, who pushed to get the United Church Utah Assn. into Shared Ministry in Utah, an event which occurred in 1982.

Halbe also has served on the State Coordinating Committee for the Homeless of Governor Bangert. He gave a full term of work on

of Christ.

His wife, Beverly, has been administrative assistant for the U.S. Fish and Wildlife Service in Salt Lake City, from which she has resigned to accompany him to Ohio. Their children, Gregory and Becky, respectively are graduate students at Ohio State University, Columbus and with the Fish and Wildlife Service in Fergus Falls, Minn. The Halbe's have been hon-

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Big horn sheep are a common sight in Yellowstone.



Bull elk forages for a meager winter meal.

Amazing moats at Miami's Metrozoo

By Peter Kiernan

MIAMI — Bob Yokel directs one of the largest zoos in the United States. From the mahogany tan and beard to the safari jacket and blue jeans, he looks every bit the part.

Metrozoo was the first zoo in the country to be built from the ground up as a cageless facility where the animals are separated from the animal watchers only by moats.

They live in areas designed to recreate their natural habitats: European steppes, Asian jungles and African velds.

It is also Florida's sixth largest tourist attraction.

At \$6 a head for adults, it is the second most expensive American zoo, after San Diego.

But Yokel makes no apologies. "Good, bad, or indifferent that's the way it is."

With 285 developed acres, the zoo has more exhibit acreage than any other in the United States, and an above-average number of species, 245, mostly larger mammals and birds.

From exhibits that range from rare white tigers lolling about in front of a reasonable facsimile of a 13th Century Angkor Wat temple to a walk-in aviary, the largest man-made aviary in the world, the zoo makes a determined attempt to "frame" its collection in a natural and pleasing setting.

"Hopefully we can impart something to visitors about the world they live in and share with the animals, plants, and even other people," says

branches off trees and threw them at kangaroos to make them jump for the camera; or the woman caught at the gate trying to smuggle out a rare bird in her purse.

On the other hand, he had seen poor children in silent rapture at the sights. Some 60,000 school children visit the zoo annually, many for free - a rare concession for Yokel.

"Hopefully we can even direct them in some way, perhaps into biology, or some aspect of the natural world," he says.

While he talks of expansion of the zoo, which owns 740 acres, in terms of new exhibitions and "opportunities for people to spend money," he admits his true interest lies "on the other side of the moat."

The animal's side.

Worldwide, there are only 20,000 acres developed for zoos, the "captive ark" for endangered species, he says.

In an effort to save them, some 120 U.S., Canadian and European zoos take part in the International Species Inventory System (ISIS) a computerized file which traces the lineage of about 51,000 mammals and birds and allows zoos to locate suitable mates for their own creatures.

But transporting animals such as the female Indian rhino which Metrozoo recently flew to Philadelphia for breeding as part of a species survival program presents certain problems, such as cost and the perils of tranquilizers.

In the last decade, technological advances have allowed zoologists to consider such alternatives as sperm